

REMARKS

In response to the rejection of claims 1, 6-10 and 13-15 as obviousness in view of Graham, the Examiner acknowledges (in paragraph 23 of the Office Action) that the change in the gap does result in a change of operation, but then suggests that “the change of operation is by no means unexpected in the art. Reduction of the gap will slightly reduce the diffusion, but will by no means destroy the inventive content of Graham”. First of all, it is respectfully submitted that whether putting the present invention into effect implements the invention disclosed and/or claimed in Graham is not the point. The question is whether it is obvious to reduce the air space (that in Graham is taught as being required to be in the order of 300 mm) and instead to provide it at only about 2 mm.

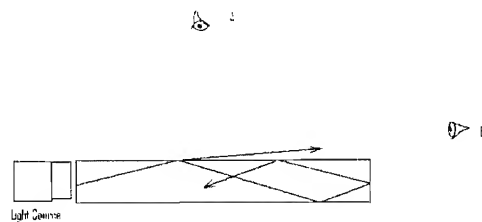
300 mm is taught in Graham to be necessary to achieve the required secondary diffusion. In Graham, this is theorized as being the result of scattering of the light off the gas molecules in the gap. Accordingly, while it may be obvious to reduce the gap, comprehending some reduction in diffusion as a result, this is not the same as apparently destroying the entire mode of operation, which would clearly be expected in reducing a gap by a factor of 15.

Graham teaches that the light leaves the plate at a low angle, less than 30 degrees and preferably less than 5 degrees. Graham teaches that a substantial gap is required in order to give the light the opportunity to scatter and to achieve a uniform appearance. It is known, of course, that if a translucent layer is applied directly to the surface of a transparent material, this has two effects. The first is to destroy the total internal reflection that is necessary to diffuse the light evenly through the transparent material. The second is that any unevenness of the transparent surface, in terms of bright or dark spots, is evident. Graham teaches that the separation needed with forward diffusing material and light exiting at a narrow angle is of the order of 300 mm. However, surprisingly, the present invention has recognized that, if the gap is small, in the order of 2 mm, then two main effects are felt.

First is that, despite the light exiting the transparent member at a narrow angle, with the diffusion layer being close to the transparent layer, the light is immediately captured by the diffusion layer and scattered by it in all directions. Since the light is exiting the transparent member across its entire surface, even though it is only visible at narrow angles (and thereby appearing to emanate from the edge), the diffusion layer turns out to be evenly illuminated. Second, any small imperfections in the surface of the transparent layer are masked by the gap that remains.

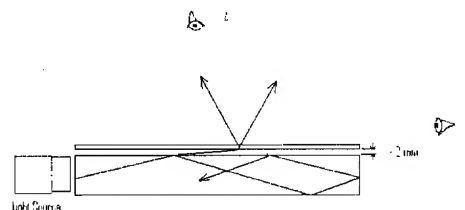
Thus in Figure 1 below, when the eye is in position A, the plate beneath looks dark, because the light is primarily exiting at a shallow angle, as shown. When the eye is moved to position B, the brightness of the light exiting can be appreciated.

Figure 1



However, in Figure 2, when a translucent plate is disposed above the transparent plate, by a distance of about 2 mm, suddenly the light escaping from the plate becomes visible from all angles and the translucent plate is, in fact, and surprisingly, evenly illuminated across its surface, and without imperfections and, most importantly, without significant decay of the light intensity with distance from the light source.

Figure 2



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In view of the foregoing comments, the Examiner is respectfully requested to reconsider and withdraw the obviousness rejection.

With regard to the dependent claims, claims 2 to 4 stand rejected as obvious over Graham in view of Thompson (US4561043). However, Thompson fails to teach the concept of a leaky waveguide and, in any event, does not disclose a 2 mm gap between the rod 16 and tube 34.

With regard to claim 3, the undulating rod 47 of Thompson is not within a tube. Furthermore, it is the surface of the rod that is required to be undulating, and not the rod itself as disclosed in Thompson. That is to say, the surface undulates with respect to the rod, as shown in Figure 2 and described on page 4 in these terms: "The rod 10 is provided with a predetermined undulating surface illustrated in exaggerated form at 13 in Fig 2".

The remaining claims 11, 12, 16 and 17, being based on claim 1, which, as argued above, is regarded as being non-obvious, are also therefore non-obvious and allowable.

Therefore, reconsideration and allowance of claims 1-4 and 6-17 is respectfully requested.

Respectfully submitted,

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